THE VETERINARY RECORD

A Weekly Journal for the Profession.

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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A MINISTRY OF PUBLIC HEALTH.

To-day we reprint a paper read by Mr. F. W. Emery more than eight years ago, it is of interest in view of the prospect of a Ministry of Public Health in the near future. The paper is simply a proposal for the establishment of such a Ministry. Some of the subjects it mentions, such as breeding, are not at all likely to be dealt with by a Ministry of Public Health; others are certain to be, and to develop greatly under it; and it is imperative that the veterinary position should be assured in connection with these.

Of course, most of the subjects which would be entrusted to a Ministry of Public Health do not concern our profession at all. It is more than doubtful, too, whether such a Ministry would ever assume any of the functions in relation to purely animal disease now discharged by the Board of Agriculture. Probably the only veterinary subjects taken up would be those directly bearing upon the preservation of human health, such as meat and milk. These are just the questions in which the medical profession has always unjustly overshadowed us.

Medical men will always be much more important than veterinary surgeons under a Public Health Ministry. This we have to admit, claiming only full recognition for our special knowledge in its limited field. Take meat inspection as an instance. Medical men rightly expect the chief voice in deciding what conditions should render a carcase inadmissible for human food; veterinary surgeons, conceding this, claim that they alone should judge whether those conditions affect a given carcase. The justice of this seems self-evident; but it may not be easy to get it established by law. Probably strong effort will be necessary to ensure our rights.

Had a Public Health Ministry been set up in the first year of this century, it would have found us far less fitted either to obtain recognition or to work successfully under it than we are now. Our means of influencing Parliaments and Governments were then comparatively undeveloped; we had no facilities for post-graduate training, and no post-graduate degree which gave any guarantee whatever of special knowledge or experience of public health work. We all know how active our Parliamentary Committee has become since then, and what strides we have made in post-graduate education, especially as regards public health. All this is due to our Council, upon whom the responsibility for securing veterinary rights under a Public Health Ministry will fall; and the Council's record for the last fifteen years warrants the expectation that the influence will be fully utilised.

ENTAMŒBIC DYSENTERY IN THE DOG.

This appears to be the first case recorded of naturally acquired entamœbic dysentery in the dog. It is published by S. T. Dorling (*Proc. Med. Assoc. Isthmian Canal Zone for the Half-year April to Sept. 1913*). Vol. 6. Part I., pp. 60-62).

The subject was a large deerhound which had been in the Panama Canal zone for several months, and had just been brought into the laboratory for observation in connection with hookworms. On admission it was suffering from blood-stained diarrhœa and great abdominal pain. Fæces, on examination, were found sometimes to contain trypho-zoites. The animal became very emaciated and died after eleven days.

Post-mortem examination showed that the mucous membrane of the colon was dotted all over with innumerable minute red punctate superficial erosions, but no large ulcers. Smears always contained entamœbæ in which at times red blood cells were seen. The ileum contained hundreds of hookworms, but smears of the mucous membrane contained no entamœbæ, although a few were seen in sections on the surface.

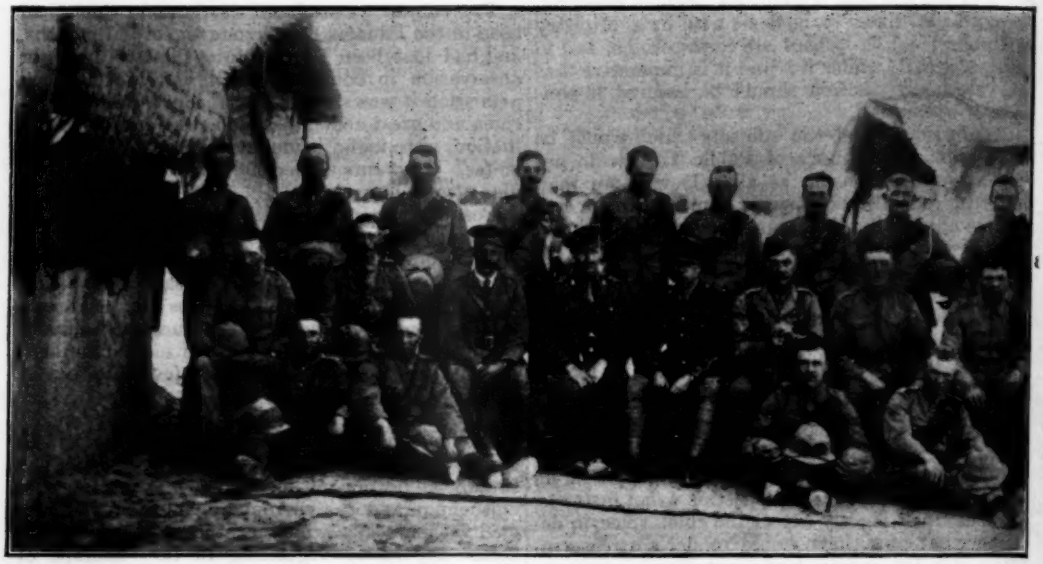
On histological examination the minute red ulcers on the mucous membrane of the colon were seen to be infiltrated with leucocytes and entamœbæ. The superficial portion of the ulcers was denuded of epithelium, and the surrounding portion was covered with mucous which contained many trophozoites apparently vegetating in it. Clumps of entamœbæ could be seen in places making their way into the intestinal crypts. The invasion was very superficial, and the submucosa and muscularis were not involved. The lesions were thus not like those seen in the cat experimentally infected per rectum with the trophozoites of *E. tetrogena* of man. This suggests that the lesions were caused by a different species of entamœba.

Description of the trophozoite. In the wet state it measured from 16 to 32 microns in diameter; the majority contained no red blood corpuscles but some contained up to eight or ten. The ectosarc was clear and well differentiated from the endoplasm which was granular and contained vacuoles. The nucleus and usually its karyosome were easily detected. When stained *intra vitam* with gentian violet the peripheral chromatin of the nucleus was displayed as many fine particles, and the centriole and karyosome were distinctly shown. With phosphotungstic acid hæmatoxylin, the trophozoites stained well and the nucleus was seen to be made up of rather fine chromatin granules. The centriole was not uncommonly eccentrically placed while the karyosome appeared as a finely granular ring.

Specimens dry fixed and stained with Giemsa and differentiated with ammoniated ethyl alcohol present a picture not unlike *E. tetragena*, except that the karyosome is quite different from that usually seen in the latter. It is smaller and more dense, its band is broader and it is never seen in the form of a reticulum, nor as granules scattered through the nucleus as in *E. tetragena*. Specimens in films wet fixed and stained with hæmatoxylin gave the following average diametrical measurements in microns. Trophozoite 21 to 28, nucleus 5.5, karyosome 2.4, Centriole 0.7.

All the trophozoites were of the large vegetative type usually seen in active lesions. Their appearance was in general like that of *E. tetragena* except for important differences in structure of the nucleus. Cysts and other perpetuating forms were not discoverable. A puppy fed with material containing trophozoites six hours after the death of the host did not contract the disease. Rectal inoculations were not made.

From the characters enumerated above the author believes that the entamœba found in the dog differs from *E. tetragena* and *E. coli* which cause lesions in the cat and man: he provisionally proposes the name *E. venaticum* for this new species.—(*Trop. Vet. Bulletin*).



THE A.V.S. IN MESOPOTAMIA.

I enclose in this a group photograph of the British personnel of one of the Veterinary Sections serving in Mesopotamia. It was taken shortly after the capture of Bagdad, and I thought it might be of interest if you care to publish it.

March 20th.

To the Editor, *The Veterinary Record*.

E. NICHOLL, Capt. A.V.C.
O.C. 16th Field Veterinary Section.

ABSTRACTS FROM FOREIGN JOURNALS.

THE EFFECTS OF THE VENOM OF SERPENTS UPON ANIMALS AND THE PREPARATION OF ANTI-TOXIC SERUM.

D. T. Mitchell has published an article upon this subject (*Boll, Istit. Int. di Agr.* 1916). At the commencement, he reviews the researches of the last quarter of the nineteenth century. These have demonstrated that the active principles of snake venom are soluble proteins, and have also shown that immunisation of animals against snake-bites may be undertaken in the same way as against contagious diseases, and that the serum of immunised animals possesses specific anti-venomous properties.

The quantity of venom which may be obtained from one serpent in a given time depends upon a number of factors, *viz.*, the species, condition, and size of the individual, the state of fasting or of nutrition, the amount of time which has elapsed since the serpent has last bitten, and the duration of the serpent's captivity. The greatest quantity may be obtained from the King Cobra, and the least from some species of *Hydropinæ*. During an experiment lasting four months upon a cobra (*Naja Haie*), 200 milligrammes of desiccated venom, corresponding to 670 milligrammes of fresh venom, were obtained.

The venoms are very complex liquids, which contain some of the following constituents; not all of which, however, are contained in every venom. (1) *Neurotoxins*, which comprise (*a*) those acting principally upon the respiratory centre; (*b*) those acting principally upon the vaso-motor centre, and (*c*) those acting principally upon the nerves and upon the discs of striated muscle fibre, particularly upon the phrenic muscle. (2) *Agglutinins*. (3) *Cytolysins*, comprising emolysins and leucolysins. (4) *A fibrin ferment*. (5) *A proteolytic ferment*. (6) *Antibacterial substances*.

The neurotoxins constitute the most active principles of many venoms.

The author gives an account of the effects of snake-bites. In the venom of *Colubridæ* the neurotoxins with affinity for the respiratory centres generally predominate. These serpents (of which, as regards the action of the venom, *Naja tripudians* represents the type) cause a general paralysis, with special paralysis of the respiratory mechanism. In the venom of *Viperidæ* the toxins which act upon the blood and upon the circulatory system predominate; this venom, and in particular that of *Vipera russellii* act therefore upon the blood and the circulatory system, causing the sudden appearance of diverse symptoms, with a necrotising inflammation at the local lesion if the life of the animal is prolonged beyond the acute phase.

The first scientific attempt to immunise against snake bites occurred in 1887. In that year Sewell, by means of small repeated doses, immunised pigeons which were then able to support ten mortal doses of the venom of *Crotalus*. Calmette, in 1892, used venom heated to 80° C. and was able to immunise rabbits; but his serum, deriving its origin from the *Colubridæ*, had slight action against *Viperidæ*. Afterwards other pure specific sera were prepared, *viz.*, Lamb's serum, derived from *Naja tripudians* (strongly anti-toxic against cobra venom; Lamb's serum, derived from *Vipera russellii* (anti-toxic against the venom of viperidæ); Noguchi's serum, derived from *Crotalus* (anti-toxic against the venom of *Viperidæ*, but without effect upon that of the cobra; Noguchi's serum, derived from *Ancistrodon* (anti-toxic against the venom of *Viperidæ*, but without effect upon that of *Colubridæ*. The preparation of a polyvalent serum has been attempted with some success, but without attaining a sufficient degree of polyvalency to meet all exigencies.

The author furnishes some particulars of a practical nature upon the mode of preparing the serum by the method of Calmette and by that of Watkins-Pitchford, which has been adopted in Natal. He adds that, for the correct estimation of the efficacy of the serum, it is necessary to know the minimum mortal dose of venom, and this varies for every serpent. He has carried out a series of experiments regarding this point upon the poisonous snakes most common in South Africa at the Laboratory of Pietermaritzburg, and gives a table showing the minimum dose per kilogramme for the rabbit of each species of serpent.

The Laboratory of Pietermaritzburg, by mixing monovalent sera of maximum potence, has prepared a polyvalent serum against the venoms of the "mamba," the puff adder, and the cobra.—(*La Clinica Veterinaria*).

Lacteal Secretion in a Male Goat.

This sexual anomaly, although reported by teratologists, is seldom seen. On account of its rarity, Mellis has described the following case (*Revue Vétérinaire*).

The subject was a black male goat of Algerian breed, three years old, which was brought to be slaughtered. Previously the animal had served in a flock as a sire, and had begotten numerous offspring.

The goat was of masculine aspect and provided with all the attributes of his sex, but presented the peculiarity of possessing two well developed mammæ immediately in front of the testicles. These mammæ were from 7 to 8 centimetres (=2¾ in. to 3½ in.) in length, and gave a normal milk in fairly large quantity. The owner stated that he had drawn away the contents of a large tumbler daily. The position of the mammæ was normal, or nearly so.

After slaughter, Mellis minutely examined the animal's genital organs, without discovering any interesting peculiarity. Dissection of the abnormal mammæ showed that they were constituted of a glandular parenchyma absolutely resembling that of normal mammæ, with a galactophorous reservoir which, in relation to the volume of the udder, was very important,—(*Revista de Higiene y Sanidad Veterinaria*).

Echinococcus Cyst in the Heart of a Horse

Echinococcus cysts in the equine heart are very rare. Hitherto veterinary literature has only produced one observation, recorded by Palat in 1883. Césari now reports a second case (*Bullet. Soc. Cent. Méd. Vét.*).

The subject was a horse, twelve years old. The cyst formed a globular projection the size of a hen's egg upon the wall of the left ventricle, towards the apex of the heart, underneath the pericardium.

The cystic wall was extremely thin, and its transparency enabled the proligerous vesicles to be seen in the form of small white spots. The cavity of the cyst was single, and contained 95 c.c. of liquid, in which a white clotty suspension formed of isolated scolices and a considerable number of free proligerous vesicles was found. The parenchymal wall was lined by adherent vesicles. The neighbouring cardiac fibres were atrophied by the compression they had sustained.—(*Revista de Veterinar Militar*.

W. R. C.

An Order is issued, to come into force on May 21, restricting the feeding of horses with cereals; but not hay, straw, bran, or dried grains. Agricultural horses, stud horses, and certain brood mares are excluded. Horses used for trade and business purposes and thoroughbreds are to be rationed on oats, maize, beans, or peas. Carriage horses, hacks, hunters, and polo ponies, etc., are denied such rations.

Royal College of Veterinary Surgeons.

FELLOWSHIP DEGREE.

An Examination for the Fellowship Degree was held at the College, 10 Red Lion Square, London, W.C., on Saturday, 12th inst., when three candidates presented themselves. The following were successful:—

FRANK CHAMBERS, Capt. A.V.C. Thesis: "Investigations into Posterior Paralysis. A Disease of Cattle in N. Rhodesia."

L. J. KELLY, Lieut. A.V.C. Thesis: "Heat Prostration as it affects the Horse."

The Examiners were:—Prof. J. Macqueen, Mr. J. Malcolm, Col. F. Raymond, and Mr. W. Woods; Mr. W. F. Barrett, Chairman.

FRED BULLOCK, Secretary.

SUBSCRIPTIONS TO R.C.V.S.

The Secretary of the Royal College of Veterinary Surgeons begs to acknowledge the receipt of the following subscriptions for 1917:—

W. F. Barrett, Brockley, S.E.	£1	1	0
A. J. Cattell, Brecon, S. Wales	1	1	0
C. Elphick, Newcastle-on-Tyne	1	1	0
G. Elphick, Newcastle-on- Tyne	1	1	0
H. S. Elphick, Newcastle-on-Tyne	1	1	0
D. Evans, Llanrwst	1	1	0
R. E. Klyne, Bournemouth	1	1	0
F. Lindsay, Capt. A.V.C.	1	1	0
G. Newsome, Wicklow, Ireland	1	1	0
J. Peddie, Major A.V.C.	1	1	0
E. H. Wyly, Capt. A.V.C.	1	1	0
Previously acknowledged	532	5	0
	£543	16	0

NORTH OF IRELAND VETERINARY MEDICAL ASSOCIATION.

Sir,—In view of the establishment of a Ministry of Public Health, the enclosed copy of a paper read before a meeting of this Association, as far back as 1908, by Mr. F. W. Emery, F.R.C.V.S., will, we believe, prove of sufficient interest to the profession as to warrant its republication in *The Veterinary Record*.

The members of this Association are of opinion that the time is now opportune for the veterinary profession to make its voice heard, so that it will occupy that position to which its merits entitle it under the Ministry of Public Health.

When the Bill has passed through all its stages in Parliament it will be too late. If the veterinary profession is to receive its due recognition representation must be made at once.

As an instance of how the profession is slighted and overlooked, the President of the Board of Agriculture and Fisheries has appointed a Commission to consider the question of production and distribution of milk, and the veterinary profession, who above all others is entitled to deal with a question of this nature, is absolutely ignored.—Yours truly,

J. A. JORDAN,
G. W. LITTLE, } Hon. Secs.

A PLEA FOR THE ESTABLISHMENT OF A VETERINARY SERVICE OF HEALTH, WITH REMARKS ON THE DUTIES TO BE ASSIGNED TO SUCH. By F. W. EMERY, F.R.C.V.S., Belfast.

Read at the meeting of the North of Ireland Veterinary Medical Association, at Belfast, Friday, Dec. 11, 1908.

I think we are all agreed that in Great Britain and Ireland matters pertaining to public health are dealt with in a slipshod and hapazard manner, and it has probably occurred to most of us that our present methods of procedure are both wasteful and impotent.

A nation's prosperity is indicated by the health and wealth of its people, and as it is true of the individual, that wealth without health is a mockery and a delusion, so also must it apply to our people as a whole: and yet, in this twentieth century, we find ourselves only just awakening to the fact that we are year by year paying an enormous toll in human and animal life to diseases which we know we can prevent. I claim that it is time that those responsible for the guidance of our country should confer on this great question with a view of creating a State Department of Public Health, having an able member of the Government of the day at its head and responsible to Parliament.

In the creation of such a Department our profession must seek and obtain such recognition as is our due, and it is with pride and pleasure that I claim our ability to be of very great service in maintaining and safeguarding the health of our fellow countrymen, and, by protecting our animal population, contributing enormously to our national wealth. A Department of Public Health ought to be composed of two sections, a medical and a veterinary. In some matters the veterinary section to work hand in hand and in harmony with the greater branch, but on other questions, of which I shall speak later, the veterinary section must work free and untrammelled.

The duties which I would assign to this section are manifold, but none are outside the veterinary surgeon's legitimate calling, and I think you will agree with me that each subject has a distinct bearing upon the health and prosperity of our country.

I propose dealing with the following questions in order:—

1. Control with the view of lessening and ultimately eradicating contagious and infectious disease from among our domesticated animals.
2. Examination of all meats intended for the food of man; and the control of dairies and cowsheds.
3. Transit and proper marketing of animals and animal products.
4. Improvement of the breeds of animals with a view of developing those traits most remunerative to the agriculturist, and specially adapted to the various localities and their environments.
5. Control of a special scheme of horse-breeding with a view of supplying the Army with remounts.
6. Control of any scheme that may be formulated for affording veterinary aid to the animals of poor owners.

The diseases at present scheduled under the Diseases of Animals Acts in Ireland are Cattle plague, Foot-and-mouth disease, Pleuro-pneumonia, Sheep-pox, Swine fever, Epizootic lymphangitis, Anthrax, Rabies, Glanders, Parasitic mange, and Sheep scap.

To these should be added Ringworm, Canine distemper, Influenza, or pink-eye, Contagious abortion, possibly Joint-evil, and of course Tuberculosis.

In the order in which I have placed them the first six do not appear to have given rise to any uneasiness owing to their possible transmission to man, in fact I have failed to find any authentic record of such transmission, or at least of any harmful effects arising there-

from, but there can be no two opinions as to the very great loss to which they have from time to time subjected agriculturists, and whilst happily at the present moment we can claim a fairly clean bill of health in so far as they are concerned, yet any re-introduction or recrudescence of these affections would paralyse stock-raising and the animal trade generally—industries which are yet the most important and beneficial possessed by Ireland.

Now, while man is comparatively speaking immune from these six first mentioned maladies, unfortunately the same cannot be said of Anthrax, Rabies, Glanders, and Scabies. Of course the latter may really be dismissed with a few words, because while Dermatocoptes and Dermatophagus lodge on the skin of man, my experience leads me to believe that they rarely live for any lengthened period thereon, and so a temporary inconvenience is all that we are, as a rule, subjected to. Sarcoptes is, as a matter of fact, the most troublesome form of Scabies. It is transmissible from animal to animal, and from animal to man, and *vice versa*. Sarcoptes of animals and the human Acarus are really only distinguishable by a minute difference in size. Of our Domesticated animals, the horse is the most likely to transmit scabies to man, and it is the animal most liable to become infected from man.

Anthrax, Rabies, and Glanders, are practically incurable in our patients and are the sources of great loss to our stock-owners, but their worst feature is that they are transmissible to man with deadly results.

Anthrax is one of those diseases about which our present store of knowledge as to its cause is really definite, and yet what a difficulty is presented to us when we are asked to trace the origin of an outbreak. After the most elaborate and careful enquiry we often fail to connect the occurrence with a previous outbreak, or in any other way to determine the source of infection. We are advised to make special examination of artificial foods and manures, and that we should recommend the withdrawal of such foods, or the removal of animals from lands treated with such manures, as the case may be.

Man suffers from anthrax in the form of malignant pustule; he may become inoculated while dressing the carcase of an infected animal or whilst handling the wool or hide of such. Medical science has made considerable progress in the treatment of this affection, yet it is still a case in which prevention would be far better than cure.

With Glanders we are in a somewhat similar position in so far as our knowledge of the causal organism is concerned, but fortunately we are able to gauge its source with much greater accuracy, and now know that by far the greater number of cases are due to the ingestion of the Bacillus mallei. We are also in a position to state that the question of stamping out glanders is really only a question of cost.

Glanders is transmissible to man, and is fatal. It is usually the result of direct inoculation, and I see no reason why infection should not take place through the alimentary canal, as in the horse, more especially if the vitality of the subject has been lowered by debility or illness. The diagnosis of this disease in the human subject is most difficult; at times it is classified as a "septic infection," and the truth may only appear on autopsy.

Rabies, as you are aware, has been eradicated from this country, but was fairly prevalent some few years ago, and from time to time a number of our domesticated animals became infected through the bites of rabid dogs. All rabid animals are sources of great danger to mankind, as from them we are liable to become inoculated with the disease and develop that dread malady hydrophobia. And we must never forget that any relaxation on our part might lead to its re-introduction.

Of the diseases which I have suggested ought to be scheduled "Ringworm," like Scabies, is a malady which can be passed on from animal to animal and from animal to man. Because it is so spread, is disfiguring, causes depreciation in the value of infected stock, and is easily curable, it ought to be scheduled and proper regulations made for its control.

Canine distemper and Influenza (pink eye) in horses are not, of course, the same disease, and I am only bracketing them because they have so many points of similarity. For instance—both are contagious, infectious and insidious in their attack, cause great prostration in the subject affected, take a definite course, are often followed by complications, and claim many victims.

Now both affections cause much trouble and loss, and although points of similarity and divergence are manifested, it seems to me that somewhat like regulations might be adopted for both with beneficial results. For instance—considerable care should be paid to hygienic principles. The isolation and movement of affected animals should be regulated, and thorough cleansing and disinfection enforced. I am not aware of, nor have I been able to find any authentic record of, either of these maladies having given rise to illness in the human subject, in fact, regarding influenza, Prof. Crookshank writes, "Equine influenza or pink eye has been noted to be prevalent at the same time as epidemics of influenza in man, but there does not appear to be any evidence of intercommunicability or any relation between the two diseases."

Epizootic abortion, and Joint-ill, or pyæmic umbilical infection in foals are thought by some to have a distinct connection, and it seems to me to be a matter well worthy of further investigation, of course our attention is more frequently directed to the former affection among herds of cattle, while it is in foals that we mostly observe the latter. Both are infective, and both result in very serious loss to stock owners.

Being a contagious and infectious disease, and the cause of such an enormous loss to breeders, I think epizootic abortion ought to be included amongst the scheduled diseases, and regulations formulated demanding isolation of diseased animals, and prohibiting all movement from infected herds. Further investigation may give us a means of affording immunity against the disease, for cows that have suffered are more or less proof against re-infection, and if fresh stock is not introduced into an infected herd the disease appears to exhaust itself after a time.

Joint-ill is the result of infection through the pervious umbilicus, and to all intents and purposes is a preventable disease, if proper arrangements are made for foaling time. Any general regulations planned to control this malady can only be preventive.

I have purposely withheld Tuberculosis to the last, not that I have anything new to say on the subject, but because it is the one scourge of man and animal alike which calls so loudly for enlightened action.

Koch's researches resulting in the discovery of the causal organism, laid the foundation for further and continued investigation, and as the result of his labours and those of many other able workers we are now in a position to formulate schemes which give every promise of a successful issue against this deadly malady. The loss of adult life from this cause is great, and the infantile mortality is simply appalling.

The loss it causes stock owners is enormous. Year by year it claims its victims from among our domesticated animals, and in view of the fact that every infected animal becomes a real menace to the health and life of mankind, one wonders that at the present moment we are

entirely without the smallest piece of active legislative machinery with which we can commence a crusade against this deadly enemy. We are, of course, well aware of the fact that the repressive measures hitherto adopted with such signal success in relation to other animal scourges are not applicable to this disease; but it certainly does not follow that because we feel ourselves unable to do everything desired at once we should entirely give up the fight. The very intricacies of the question, and the immensity of good that would follow its eradication ought to be a sufficient incentive to about our best efforts.

In dealing with an animal plague and considering its prophylaxis, practically there are two considerations:—(1) To what extent does it affect our domesticated stock and what loss accrues thereby to breeders, rearers, and traders? (2) Is the malady communicable to man, or in any other way harmful to his health or well being?

In answering the first we must unfortunately admit that tuberculosis is very prevalent, and when we consider the number of animals which actually succumb to its effects, the great loss through the seizure of tuberculous carcases, and the enormous depreciation in the value of our stock owing to its ravages, we are forced to look upon it as a very great drain to national wealth. I think we may safely say that from 10 per cent. to 12 per cent. of our dairy stock are, to a greater or lesser extent the subjects of this disease, and about one per cent. of other cattle. Probably from one per cent. to two per cent. of our pigs are affected, and so far as this animal is concerned it appears to be on the increase.

As to the second consideration, we know a great number of consumptive persons have been infected through the entry into their bodies of bovine tubercle bacilli, and that much of our infantile mortality has been directly traceable to contaminated milk.

Very few, if any, animals are really immune to this malady, and it is on account of its widespread existence that we are so diffident about suggesting repressive legislation. It can very readily be seen that if we were successful in extirpating it from the members of one species they would be liable to re-infection from others. Yet I unhesitatingly say that active steps should be taken with a view of lessening, and ultimately eradicating it from amongst our bovine population, and I venture to prophesy that when we are successful in that direction we shall have little trouble with the disease in swine.

There can be no doubt that tubercle bacilli show a very great variation, and when passed into the bodies of animals of a different species to that from which the organisms were originally obtained. The idea has been put forward that tuberculosis in all animals is not due to a similar organism, but it seems to me much more rational to believe in the unity of the causal germ, and to ascribe its variations to the influence of the soil and surroundings upon which it has grown and propagated.

At present considerable attention is being directed to the provision of sanatoria, and the effort to schedule it as a notifiable disease—Does it not appear to one as somewhat peculiar that while we are taking such steps as the one intended to be curative, and the other with a view of limiting the danger of transmission, we at the same time allow one of the most potent factors in the dissemination of tuberculosis to go on unchecked—I refer to the disease in bovines.

Perhaps you will permit me to briefly refer to a few measures which I think might be adopted without further delay. The first thing to enter one's mind is the great necessity for the absolute prohibition of the movement of visibly affected animals; these should be seized and destroyed whenever and wherever found. It is simply monstrous to think that such animals are permitted to come into contact with the healthy, in road, railway, and sea transit, and at markets, sales, and fairs. Secondly I suggest restriction on the movement, and isolation of all cattle which, though apparently healthy, have been proved to be infected by the discovery of the bacilli in their natural discharges. Thirdly, all premises upon which disease is known to exist, or has existed, should be thoroughly cleansed and disinfected. I see no reason why these simple measures should not be adopted and I am confident that, if followed, great good would accrue.

Of course our ultimate object must be the complete eradication of the scourge, and additional means to that end should be devised. All byres in which cattle are kept should have an efficient drainage system, ample ventilation, and plenty of light—these are essential.

We now know that any owner having suitable premises and persevering in the separation of the diseased from the healthy portion of his stock, with the proper use of the tuberculin test, can, within a reasonable period, secure freedom from disease. We know, too, that if the progeny of tuberculous animals are promptly removed, isolated, and fed on pure food, they can be kept healthy. This is a very material consideration when viewed from an economic standpoint, for it enables us to continue to breed from certain diseased animals and raise a perfectly healthy stock from well known strains which are admittedly invaluable.

I fully appreciate the impossibility of asking that the latter mentioned measures should be made universal and compulsory, at least for some years, but I quite fail to see why owners who are willing to adopt such procedure should not receive every encouragement, and in fact some financial help. Grants might be made to assist in the construction of suitable premises, veterinary advice supplied, and the free testing of stock with tuberculin arranged for. By such means several centres of perfectly healthy cattle could be secured, and to farmers setting up a new stock this would be of the greatest value.

In addition to this voluntary plan, small districts might be scheduled and compulsory methods adopted, the venue being changed when success had been attained. If the Government could be induced to take up this matter with a view of stamping out the disease, I think Ireland would be an exceptionally favourable country to give every chance to such a scheme.

Examination of Meat: Control of Cowsheds and Dairies.

Practically we are without a system of meat inspection, and in view of the fact that we pride ourselves upon being in advance of other European countries in most things, it is really surprising how very far we are behind them, behind even our own Colonies, in this all important matter. It would appear that the average Britisher does not trouble himself about what he is fed upon so long as he is fed at all, and it seems still to be necessary to educate him up to the fact that by his gross carelessness in this connection he is being continuously exposed to grave dangers.

The proper inspection of meat really resolves itself into a search for the lesions of disease in the slaughtered animal, and to become an efficient inspector a good knowledge of comparative anatomy, physiology, and comparative pathology is essential. The veterinarian is the only person who can claim to be qualified for this work. This has long since been recognised on the Continent of Europe and elsewhere, and I claim that the British veterinarian in respect of both general and professional education is in no way behind his *confrère* in veterinary science in any other country; therefore, as elsewhere, he ought to be entrusted with the duty. In some few enlightened centres veterinary surgeons have been appointed to take charge of the meat inspection, but in the great majority of towns the work is allowed to go by default.

In any case, to be of real service an universal and uniform system must be adopted. In the creation of such a service it should be definitely stated what conditions ought to be accepted as constituting the unfitness of meat for human consumption. In the drafting of these regulations a board of experts, mostly composed of medical men, should be appointed and entrusted with the task of drawing up a table setting forth the various conditions which must be considered as rendering a carcase wholly or partly unfit for the food of man; then the recognition of those conditions must be the duty of the veterinarian solely, as from his knowledge and training he is pre-eminently fitted for the task. By the adoption of an uniform system for the whole country evasion and fraud could be prevented, and stockowners, breeders, and traders would be in a position to materially assist by endeavouring to produce stock free from the conditions enumerated. In the formulation of regulations governing meat inspection, great care must be taken to ensure that foreign products are dealt with in a similar manner, at least, to our own. It is just possible that some of the regulations made for the control of animal diseases have worked in favour of our foreign competitors.

That the Veterinary Surgeon is the proper person to carry out duties in connection with Dairies and Cowsheds ought not to require any laboured arguments to convince most people; yet we find local authorities so devoid of reason and so careless in the spending of the ratepayers' money as to insist on appointing lay and medical men for such work. The duties of the office are important, intended as they are to prevent the transmission of deadly diseases from animal to man, yet we find our local representatives, and after them the heads of a great Government Department (owing to lack of power) agreeing to the appointment of men for these special duties, who are, and ever will be ignorant of, and useless for, the work they are expected to control.

Economy cannot be secured without regard to efficiency, and the mere fact of spending money in pretending to give effect to legislation is not only foolish but misleading. It is a method which is apt to lull the public mind into a false sense of security in the belief that protection is being afforded when there is really no protection.

Transit and Proper Marketing of Animals and Animal Products.

This is another duty which dovetails so closely into the matters previously considered that of a necessity its control should be in the hands of the service which deals with them. The thorough supervision of the movement and marketing of animals is really an essential to the proper control of contagious and infectious disease, next to those special regulations adopted for specific diseases. No action of the executive can have so good an effect on the control of disease as the keeping of an ever watchful eye on animal movements, and in suggesting the extension of that watchfulness to the transit and marketing of animal products I am but advising the adoption of a means whereby the inspection of the food of man may be the more thoroughly carried out. The better this work is performed, the better it will be for all those concerned in all branches of this trade, because British products would reach a degree of excellence at least equal to those of any other country. At the present time the opposite obtains, and buyers are practically forced into ignoring home produce and selecting foreign, the latter being the more dependable article.

Much of the treatment meted out to animals in transit at the present time is a crying shame to humanity, and the manner in which animal products are dealt with may be observed by any of you. In connection with the North of Ireland pork traffic, the way in which it is often handled is simply revolting.

Improvement of the Breeds of Animals with a View of Developing those Traits most Remunerative to the Agriculturist, and Specially Adapted to the Various Localities and their Environments.

I have now reached a very thorny question. Having had the advantage of a very varied experience in stock raising, I am forced to the conclusion that no one system can be devised which can really be made applicable to a whole country and bring about equal and salutary advantages to all. Throughout Great Britain we find a great number of very fine examples of what can be done in various centres by the adoption of practical methods directed towards the improvement of local stock. The first principles to be followed are the proper treatment of animals, and the careful selection of those intended for breeding purposes. These should be as far as possible free from heriditary disease or defects, and specially chosen on account of their near approach to whatever ideas we may have set up, and it is of the greatest importance to see that both male and female possess the nearest possible characteristics to those degrees of excellence which we wish to produce.

It is not sufficient to ascertain that the animal is healthy, free from heriditary taint, and presents those other qualities such as conformation, fat or milk producing tendencies and such like, that we may desire—these are essential—but it is equally necessary to trace the ancestry of such animals, and ascertain if through a long chain of foreparents those qualities have been produced and maintained. It is also desirable that the selected animals previous environments should have been as nearly approaching as possible to those to which we are about to subject it.

In many parts of Ireland we had certain breeds of animals which had evidently been the result of a judicious process of selection, and while some of them were far from perfect, they nevertheless were in such a state of evolution as to have admitted of the ultimate production of specialised and highly valuable strains. As instances of such, I direct your attention to the Connemara and Cushendall ponies, the old Irish "general utility" horse, the Kerry cow and the old Irish milch cow. Now these, one and all, should have been retained and graded up, and not crossed with undesirables and obliterated. Perhaps it may not yet be too late to obtain suitable examples of these classes and build up from them a fresh stock suitable to the counties hitherto famed for their production.

Of course many parts of Ireland are suitable for the breeding and rearing of the very best British strains of stock. Where such is the case, we should undoubtedly enter into a wholesale competition in their production, for they are in such demand and so profitable. But in districts unsuited to them it should be our aim and object to evolve a useful stock, in fact the very best that the surroundings will admit. I know of no person who ought to be in a better position to advise on this complex question than the local veterinary surgeon.

Control of a Special Scheme of Horse-breeding with a View of Supplying the Army with Remounts.

For some time past the question of the inauguration of some useful scheme whereby the Army could be supplied with a sufficient number of suitable remounts has been engaging the attention of the authorities, and it is more than probable that an attempt will soon be made to establish a definite system. Such work would be so intimately connected with the other duties which I have defined that from the point of view of efficiency and economy it ought to be entrusted to such a service as I have indicated.

I would suggest remount depôts at which selected sires should be kept, the service of such to be given to approved mares at a reduced fee. Farmers ought then to be granted a bonus for retaining such mares for the breeding of suitable animals, the War Office to hold an option over all such and their progeny until they reach a certain age when, if not required for Army purposes, the owners might be allowed to dispose of them in the most advantageous market. An Army that could depend upon a sufficient number of suitable healthy remounts would have half its battles won.

CONTROL OF ANY SCHEME THAT MAY BE FORMULATED FOR AFFORDING VETERINARY AID TO THE ANIMALS OF POOR OWNERS.

I do not think that this Society has discussed the question of the establishment of a veterinary dispensary system, but, if I remember aright, the Veterinary Medical Association of Ireland had the matter under serious consideration. However, I am not going to trouble you with any arguments for or against the scheme. You are no doubt aware that the idea is being given a trial in the County Wexford, and if it proves successful there, and a general application is made for the extension of its benefits to other parts, I have no doubt the request will be acceded to. Should such occur it will become our duty to do our best to make a success of it, and at the same time safeguard our own interest.

A VETERINARY HEALTH SERVICE.

Having briefly, and I must admit most inadequately, referred to the duties which ought to be entrusted to the service, perhaps you will allow me to briefly outline a scheme which might very fairly form a foundation for it.

It would of course be essential to have a central body of control acting independently in order to secure a just and uniform application of all duties and regulations. This body should consist of a Chief Veterinary Officer, an Assistant, and a sufficient number of travelling Veterinary Inspectors. Then each County should have its own Chief Veterinary Inspector, under whose direct control all district Veterinary Surgeons should act; Counties should be divided into suitable sized districts each having a district Inspector, who should not be a whole time officer but a general practitioner. Now I wish to be distinctly understood, that I believe there would be many and varied duties arising under such a service which it would neither be desirable nor essential to employ a veterinary surgeon to perform, but I must at the same time emphatically claim that every branch of the work should be under his direct control and supervision.

In creating this service, I would claim every public official, either acting directly or indirectly in connection with the discharge of such duties as I have enumerated. On a rough estimate, I calculate that we are at present paying fully £50,000 per annum for such services, and we are not by any means securing efficiency; by co-ordination, and re-organizations we can secure, for all practical purposes, the section of the department which I suggest ought to be created and with but very little increased expenditure. The present methods of isolated action tend to overlapping, inefficiency, and waste. The supplanting of the divided efforts by an uniform system would prevent loss of money, and bring enormous returns to agriculturists—a deserving body who have been neglected too long.

We are sometimes asked what steps the Royal College of Veterinary Surgeons has taken to ensure that its graduates are fitted for the onerous and important duties which we claim should be granted them. Replying to this I would say that the advance of the veterinary profession during the past fifty years has been phenomenal, and equal to that of any other scientific body in the world. Our graduates have had to submit to a long course of study, covering four years, have been taught by a band of brilliant and devoted men, and have been subjected to periodical tests of as searching a nature as it has been possible to devise in order to ensure efficiency.

In conclusion, I cannot do better than quote from Sir John M'Fadyean, President of the R.C.V.S. and Principal and Dean of the Royal Veterinary College, London, who in a recent speech said "that now and always the aim of the Royal College of Veterinary Surgeons would be to fit its members that they should discharge their duties not merely to their own advantage but to the public interest."

Extract from *The Medical Officer*, Jan. 23, 1909:—

"The Infectious Disease (Prevention) Act, 1890, enables a medical officer of health to inspect a dairy, whether within or without his own district, in order to ascertain whether the milk supply is likely to cause infectious disease. He must be accompanied on his visit of inspection by a veterinary inspector or by a duly qualified veterinary surgeon, and any recommendation which he makes to the sanitary authority as to the discontinuance of the supply of milk from a particular farm must be accompanied by a report from such veterinary inspector or surgeon. A veterinary officer has thus been recognised in the equipment of the public health service for nearly 20 years. The time would seem to have arrived when this official's duties in the service should be very appreciably extended, and the scope of that extension has recently been very ably and fairly discussed by Mr. F. W. Emery, F.R.C.V.S., of Belfast, before the members of the North of Ireland Veterinary Medical Association. The matters which he proposed should be assigned to veterinary inspectors so far as they concerned the public health were the control with the view of lessening and ultimately eradicating contagious and infectious disease from among domesticated animals; the examination of all meats intended for the food of man; the control of dairies and cowsheds; the transit and proper marketing of animals and and animal products, and the improvement of the breeds of animals. In actual practice the inspection of meat in this country is in the hands of the inspector of nuisances, who, in the large majority of instances, has had no special training in the subject, although when he is in doubt, he is able to call to his assistance the medical officer of health. In a few instances, a qualified veterinary surgeon has been appointed to render help to the nuisance inspector, and in still fewer, a qualified veterinary inspector is included in a sanitary staff, and to him is allotted the duty of making actual inspections. This last arrangement is the one which should commend itself to all those who are anxious to improve the existing system, or want of system, of meat inspection in the United Kingdom."

Grass Disease amongst Horses.

Last year, owing to the prevalence of grass disease amongst horses in Forfarshire, the Angus Agricultural Association appointed Professor Dewar of Edinburgh and Mr. T. M. Inglis, Forfar, to investigate this trouble. Their report appears in *The North British Agriculturist* of May 10, and from it we take the following excerpts.

"For some time reports have come from Forfarshire of a mysterious disease affecting horses whilst at grass and causing a serious mortality amongst them. In the summer of 1914, at the request of the Board of Agriculture for Scotland, inquiries were made to ascertain whether there were any distinct grounds for these reports, and, if so, to obtain some idea of the losses that

had taken place. The inquiries were made by correspondence, but the veterinary surgeons practising in the County, or rather in the affected district, for if not confined to it, it was most prevalent in the south-eastern part of the county, were both prompt and frank in their replies, and their services in the matter have been much appreciated. While in some parts of the county the disease seemed to be unknown, or unrecognised, it was evident that serious losses had occurred. On some farms two, three, and four horses had died, and in the opinion of the owners and professional attendants, all from the same mysterious disease. As the summer was pretty well advanced before these inquiries were made, and as the disease only prevails to any extent in the early summer, fresh cases had ceased for the season and little more was heard of it at that time. In the summer of 1915 the mortality had not been quite so great, but steps were taken by the sufferers to get at the root cause of the trouble, and the assistance of the Highland Society and the Aberdeen College was invoked in the inquiry. This investigation was mainly directed to a search for any deleterious or poisonous plants in the pastures, and did not result in anything definite.

"In June, 1916, at the instance of the Angus Agricultural Association, arrangements were made with the reporters (Prof. Dewar and Mr. T. M. Inglis) to undertake a further and more particular investigation into the matter.

"On 1st July, at Carlungie, a *post-mortem* examination on a six-year-old bay cart gelding, which had died the previous night, gave the following result :—Carcase very tympanitic, organs all congested, heart large, soft and flabby, blood dark and fluid except a small pale clot adherent to the mitral valve, stomach fairly healthy in appearance and contents almost normal, some 12 or 14 feet of small bowel—jejunum—inflamed, large colon nearly all dark red and discoloured in patches very distinctly visible from the outside of the bowel, no very pronounced impaction, but in the second portion of the colon the contents were formed into balls and caked immediately in front of the pelvic flexure. Not a great amount of ingesta in the bowels, certainly not more than normal. This horse was said to have only been observed ill for about forty-eight hours and never showed acute pain.

"Proceeding to Mr. Ogilvy's, Mains of Ardestie, we were shown a three-year-old mare which was said to have been ill for about three weeks. She looked thin and tucked-up in the belly, pulse 48, temperature 101° F., conjunctivae a dirty yellowish colour with injected vessels, she seldom showed pain, gave a scrape occasionally with a fore foot, and lay a good deal. She was evidently weak, had been fed mostly on milk ; and some dung she had passed—although firm—had little if any vegetable fibre in it.

"A gelding had died two days before, and we were shown his bowels, which had been kept for us. They had an inflamed appearance, but no distension anywhere until in the rectum we discovered a piece bigger than two fists, and on cutting into it, found it was due to great thickening of the walls of the bowel. The centre of the mass was about ten inches from the anus. On inquiring, we were told he had strained a good deal in passing faeces.

"Specimen of the contents of the alimentary tract from the horse at Carlungie was sent to Mr. Stevenson Macadam, analytical chemist, and of the tissues and organs to Dr. M'Gowan, Laboratory of the College of Physicians, Edinburgh. [From these and subsequent specimens no incriminating evidence of any particular substance was obtained. It is noted that owing to delay in receipt most of the specimens were 'in an unsatisfactory condition before they were examined.']

"On 7th July we proceeded from Forfar to Omachie, by Dundee. There we were shown a big, strong five-year-old gelding, for which Mr. Batchelor told us he paid £82 last April. He had only been observed ill two days before, and was now standing dull-like, head drooping a little, breathing much too frequent, temperature 104·2° F., slightly tympanitic but not sufficient to cause distress. He had been given some oil and whisky. Mr. Batchelor had no hesitation in having him killed for our examination, as those familiar with the disease assert that once a horse is fairly in the grip of it there is no recovery. *Post-mortem* gave the following results : Carcase in fair condition, all tissues and organs seemed congested, stomach distended mostly with gas and somewhat inflamed, mucous membrane of the whole alimentary tract more or less inflamed, small bowel not markedly discoloured from the peritoneal surface, large bowel did not contain an extra amount of ingesta, but what was present was dry and firm, with no fluid in either colon or caecum. The rest of the bowel was much the same all the way to the anus. Larynx, pharynx, and gullet œdematous, cellular tissue between the trachea and gullet infiltrated with an amber-coloured fluid, very like that often seen in anthrax in the horse, larynx and opening of the glottis swollen, inflamed, and soiled with food material. When the drier contents of the large bowel were removed, large pieces of the mucous membrane came with them—almost black.

"Revisiting Carlungie, we were shown a big, good-looking five-year-old bay gelding. He was loose in a covered court. We were told he had been observed about mid-day on Monday (four days before) pawing a little. He did not look ill, was neither too full nor too empty even on examination, was not dull, did not show pain, and a stranger seeing him was not likely to have suspected anything wrong. Pulse about 60, temperature 101·4° F., mucous membranes deeply injected—a tint almost like that of pink-eye. Learned subsequently that this horse died on the 10th after being a week ill.

"It may be said that at an early stage of the enquiry we were convinced that the mortality amongst the horses was not due to what is generally recognised as "disease." It seemed equally clear that the deaths were not due to mechanical obstruction caused by indigestible grasses ; there was something more than impaction caused by tough indigestible fibrous material here. Keeping in view the symptoms exhibited, the inability to swallow, the paralysis of the pharynx and gullet, the paralysis more or less complete of the whole alimentary canal, it was evident that some more active agent was exercising its baneful influence. Everything pointed to the cause being a vegetable poison, and to the owners being right in their suspicion that it was due to something poisonous being picked up and eaten by the animals from the pastures on which they were grazing.

"We know that the pastures were carefully examined two years ago by capable investigators without any suspicion attaching itself to any vegetable met with—herbaceous or otherwise. But we also know that substances ordinarily used and valued as foodstuffs are occasionally so erratic in their effects as to prove active poisons instead of retaining their usual beneficial, nutritive character. One of the first of these to which the attention of the veterinary profession was directed is the *Lathyrus sativus* or *Lathyrus cisera*, the seed of which is known as the chick-pea or chickling vetch, or Indian mutters. As long ago as 1884 this food material caused the deaths of 21 horses in Liverpool out of a commercial stud of 80. Other 14 manifestly affected recovered. Another plant sometimes dangerous is the *Phaseolus lunatus*, the seed of which is often imported into this country as Java, Rangoon or Burmah beans, and is also known as Paigya. In December, 1905, a dairy farmer in Dumfriesshire was feeding it to his cows, and it caused in a very short time the deaths of 26 out of 32 animals that partook of the mixture.

The Lupin, which is a common plant in our gardens, is recognised as not infrequently manifesting actively poisonous effects. It is largely cultivated in some countries on the Continent, not only for its seeds but also as a forage plant, and is sometimes cultivated to plough down green as a manure. Sheep are the usual victims to this plant, which, although poisonous to some extent to horses, is not so fatal as to sheep. The yellow lupin—*Lupinus luteus*—is considered the worst. It is affirmed, however, that it is only on certain soils, in certain fields or even in parts of fields, and in some seasons, that it is poisonous. On the other hand, in other districts, where it is grown regularly and sometimes used as human food, it is quite innocuous. These three plants, given as illustrations, all belong to the same natural order—*Leguminosae*—and there are in the fields here plants of the same natural order growing in great profusion. These are the clovers.

Now, several Continental writers have observed symptoms of poisoning and sometimes fatal results, which they ascribed to the eating of clovers, and even designated the effects as "Clover disease." Although some have considered the red or crimson clover as a contributing cause, it is the alsike clover (*trifolium hybridum*)—the poisonous properties of which have long been known—that is generally believed to be the cause of clover poisoning. It is just before the plant comes into flower that its poisonous effects are most generally manifested, and it is also known that at this stage chemical analysis shows that clover contains an unusually large amount of nitrogenous matter. At this stage of its growth its albumenoid ratio is higher than is considered either desirable or profitable in any food ration given alone. It may well be, therefore, that about the same stage the plant undergoes some subtle change whereby poisonous properties are developed which are not present at other periods. On inquiry it was found that all the seed mixtures sown by those who have been losing horses, had been liberal in the amount of clover, and the majority—and those the greatest sufferers—had been sowing 2 lb. of alsike clover to the acre, surely more than is generally sown throughout the country. We are a little surprised at the amount of this clover sown, as it was recognised forty or fifty years ago that although easily grown and a vigorous forage plant, animals as a rule did not care for it if by any chance it was allowed to get too rank—to make too luxurious a growth. Even cattle avoid it. Other clovers are undoubtedly safer, and plenty of clover can be got in the pastures without using this at all. Even if used, it might be restricted to half a pound per acre, and the others increased if thought necessary.

It may be asked—Why are the effects mostly confined to young horses in their prime—the best of horses? It is well known that animals can get more or less accustomed to poisons, more or less immune to them, just as the human subject does to tobacco and alcohol. Further, at this age, horses are at the very top of their vigour, both in their physical ability and their digestive capacity. This trouble occurs in the early summer, the horses have been working hard, and that in itself acts as a stimulant to the digestive organs. They are turned out to grass and do themselves full justice, while if a few years older they have become more accustomed to the plant, more immune to it, and their digestive organs not quite so active. In saying that they do themselves full justice, we do not mean that they eat to repletion, which generally results in flatulent colic or overloading, but that while a large amount is eaten, it is fully digested and assimilated. There seems no doubt that this poisonous action is cumulative—that it would be almost impossible to produce the poisonous effects in one feed, however large or however concentrated the harmful agent in it may be. And we see that once it is absorbed and manifesting its baneful effects, these effects remain and it is almost impossible to get them eliminated from the system again.

Apart from stopping or reducing the amount of this clover sown, it appears possible, even at present, to reduce the risk to a very considerable extent. The growth of clover in our fields varies in different seasons. There is often a more luxurious growth in one year than in another, and an effort should be made in putting the horses out to grass to put them in fields where there is a minimum amount of clover and a maximum of grasses. The fattening cattle could be put in the fields in which the clover is most plentiful. After it is in full bloom it does not appear to be so dangerous.

Attention to those points will, in our opinion, go to show that the serious losses hitherto incurred amongst horses at grass in the early summer, can be greatly diminished if not altogether arrested.

Goats' Milk.

Less than twenty-five years ago Professor Nocard, in speaking of the 130,000 goats and kids which at that time were brought into Paris every spring for slaughter in the shambles of La Vilette, said that amongst all these animals the meat inspectors had never found a single case of tuberculosis. In that statement lies the essence of the argument in favour of goat's milk as a substitute for cow's milk. Despite all the efforts of legislators, the danger of infection through the milk of diseased cows still exists; but goats, if not actually immune, are very refractory to the attacks of the tubercle bacillus. In spite of its manifold advantages, goat's milk has never become popular in these islands, although in many other countries it is a common article of diet, and in some parts of France and Switzerland the goat often takes the place of the wet nurse, to the satisfaction of all concerned. In the memoirs of Madame Héritte-Viardot, niece of Manuel Garcia, the inventor of the laryngoscope, we find the author recording her indebtedness to a couple of goats which furnished milk for her little son during a voyage from England to the Cape, which in those days (1863) was no light undertaking, particularly for an infant.

At least two societies—the National Goat Club and the *British Goat Society—have been formed for the purpose of making the milk of "the poor man's cow" better known throughout the British Isles. Goat's milk is not only superior to cow's, but is an excellent substitute for human milk, and there is no reason why the average cottager should not possess a goat which would supply his family with pure whole milk, such as it might be impossible for him to buy in many country places, even if he had the money. Once the initial expense of purchase has been met, a goat, when circumstances are favourable, may cost very little to keep, as a considerable part of its food may consist of garden waste or of what the animal itself may find in its browsings along the roadside and hedges. Many goats thrive well when stall-fed, and the animal can be kept in health if it has a clean, dry, and well-ventilated shed to serve as a stable and a small yard or enclosure in which it can take occasional exercise. The milk is believed to be more easily digested than cow's milk, the curd being more soluble and the fat in finer emulsion. The goat will not touch dirty food and is far cleaner in its person and habits than a cow: its milk need not be boiled or pasteurised unless it has to be kept in hot weather. The late Dr. Vivian Poore took a great interest in the use of goat's milk, and for some years before his death most of the milk consumed in his house at Andover was obtained from a few goats. To the objection that

* Mr. H. S. Holme Pegler, hon. secretary, Coombe Bury House, Kingston Hill, Surrey.

the milk often had a disagreeable flavour, he replied that this could be completely obviated if the he-goat was not allowed to run with the nannies during the time they were in milk.

In some varieties of wild goats the percentage of fat may be as high as 4.8 on the average, with an extreme upward limit of 8.7. The normal is given in recent tables as 4.3 in the German breed and 3.1 in the Alpine. Crepin is of opinion—and Lesage, from his experience in Paris, appears to agree with him—that the objection which has been raised to goat's milk that it is too rich does not apply to stall-fed goats.

Lesage concludes that the advantages of goat's milk are (i) that a goat eats about one-sixth of the quantity of food required by a milch cow; (ii) that for nine or ten months it yields three to five litres of milk, which can be taken uncooked; (iii) that goats are very seldom affected by tuberculosis, since of 3,000 killed at the Lyons slaughterhouse only five were tuberculous; and (iv) that the fat being in very fine emulsion is easily digested. There is a further advantage—if the animal is kept by the consumer himself the necessity for manipulating the milk in various ways, for storing it, and sending it long distances by train, as happens commonly with cow's milk, is obviated. On the other side other side of the account must be put the liability of the goat to carry the infection of undulant fever (Mediterranean fever). In Great Britain this risk is small and, save in very exceptional circumstances, may be neglected.

The period of gestation in the goat is said to be about five months (150 days), and the average period in milk about nine months. In this country the daily yield may be expected to be about three pints; five pints is considered to be a high yield. The small yield of British goats is attributed to degeneration of the stock due to excessive in-breeding. Certain breeds of foreign goats yield not only a large daily quantity of milk for a longer period, but, what is almost equally important, breed at more than one season, so that the owner of even a small herd may reckon with certainty upon a continuous supply of milk throughout the year.

ARMY VETERINARY SERVICE

Buckingham Palace, May 12.

The following Officers had the honour of being received by The King, when His Majesty invested them with the Insignia of Companions of the Orders into which they have been admitted:—

THE DISTINGUISHED SERVICE ORDER.

* * * * *

Colonel Hubert Lenox-Conyngham, Army Vety. Corps.

War Office, May 15.

The following have been mentioned in the despatch received by the Secretary of State for War from Field-Marshal Sir Douglas Haig, G.C.B., Commander-in-Chief of the British Armies in France:—

STAFF.

Capt. (temp. Maj.) J. O. Andrews, Capt. (actg. Maj.) W. Ascott, Lt.-Col. (temp. Col.) H. J. Axe, Capt. (temp. Maj.) H. Bone, Capt. (temp. Maj.) T. Bone, Temp. Maj. F. C. Gavin, Maj. H. J. Holness, Maj. W. Ludgate, Maj. D. Macdonald, Maj. W. W. R. Neale, Maj. W. H. Nicol, Maj. (temp. Lt.-Col.) W. A. Pallin, F.R.C.V.S.; Maj. S. F. G. Pallin, D.S.O.; Capt. (temp. Maj.) E. W. Parks; Capt. A. A. Pryer, Vet. Capt. (temp. Maj.) G. B. C. Rees-Mogg, Gds.; Capt. (temp. Maj.) W. N. Rowston, Capt. (temp. Maj.) A. Spreull, Maj. C. E. Steel, Capt. (temp. Maj.) H. A. Stewart, Maj. L. M. Verney, F.R.C.V.S.; Maj. H. M. Williams.

Extracts from *London Gazette*,

WAR OFFICE, WHITEHALL, May 12.

REGULAR FORCES. ARMY VETERINARY CORPS.

Temp. Lts. to be temp. Capts.:—C. C. Parsons (Apl. 25); F. C. Golden (Apl. 26).

Temp. Lieut W. P. Robins relinquishes his commn. on termination of engagement (Apl. 24).

May 14.

Temp Lieuts. to be temp. Capts:—A. C. Burt (Mar. 28); W. Sherriff (Apl. 17).

May 16.

To be temp. Lieut.:—E. Little (May 1).

CANADIAN A.V.C.

May 12.

Col. W. J. Neill, Dir. of Vety. Servs. and Rmts., C.O.M.F., to be temp. Brig.-Gen. whilst so empld. (Mar. 17).

Temp. Lieut. to be temp. Capt.:—J. J. O'Gorman, from Can. Rly. Troops (Jan. 12).

Temp. Maj. to be temp. Lt.-Col.:—J. H. Wilson (July 8, 1915).

Temp. Lts. to be temp. Capts.:—P. P. Suillard (Sept. 22, 1914); J. F. Wood, W. W. Forsyth, J. H. Hennan, R. J. Vickers, L. H. Durkin, A. E. Frape (July 1, 1915); J. J. O'Gorman, W. E. Gough (Nov. 14, 1916).

Temp. Lt. A. Newell to be temp. Qr.-Mr. with the hon. rank of Lieut. (Mar. 22).

To be Temp. Lieut.:—C. French (Apl. 17).

Temp. Lieuts. to be temp Capts:—W. F. R. Stubbs, J. Harrington, H. R. Sharp (Mar. 24).

May 14.

The initials of temp. Lt.-Col. C. E. Edgett are as now described, and not as in *Gazette* of Apl. 20.

TERRITORIAL FORCE, ARMY VETERINARY CORPS.

May 16.

Maj. A. A. Trydell relinquishes his commn. on ceasing to be empld. with the T.F. (July 9, 1916).

Lieut. to be Capt.:—R. S. L. Beaumont (May 6).

The following casualty is reported:—

KILLED—Capt. H. L. Anthony.

OBITUARY.

THOMAS RUNCIMAN, Jun., F.R.C.V.S., of Ely, Cambs. Graduated, Edin: May, 1900.

Death occurred 8th May, at the age of 42.

MULVEY.—On May 11, Mary, wife of W. J. Mulvey, J.P., F.R.C.V.S., 30 St. Nicholas Road, Upper Tooting, and King's Road, Chelsea, S.W.

BARNES.—Killed in action on May 9, John B. Barnes, 2nd Lieut., R.F.A., youngest son of Major W. G. Barnes, A.D.V.S., and Mrs. Barnes, aged 19 years and 3 months. Natal papers please copy.

CORRESPONDENCE.

TEXT-BOOKS.

Sir,—I cannot agree with "Twenty years qualified" when he says the R.C.V.S. should subsidize the right men to write standard books that are much needed. In my humble opinion the proper way is either to get the National Veterinary Association to guarantee a fee to the writers, or for the majority of the profession to subscribe in advance for copies of the works. The R.C.V.S. might, however, honour in some other way those who have shown great merit in their literary labours.

In all truth, judging from the past, I consider there are very few men learned enough in veterinary medicine or in its literature to get up a first-class work suitable for every class of practitioner, but there are many who are sufficiently able to write a good article on some subject in which they have specialized. A system of book-making by many specialists is commonly adopted by other learned professions and I fail to observe any objection to it by ours.

We have had enough "pot-boiling" works or articles and translations; there are already too many of them in existence. If we desire to advance our science and art by good literature we don't want to put the break on it by the production of inferior and trashy muck generally but badly scraped up from the plumes of others.

What we are in need of most is a really authentic and suitably illustrated system of the science and art of veterinary medicine from a British point of view; special attention being paid to surgical anatomy and pathology, and leaving out nothing that might appear insignificant to a certain section but of great interest to another section of the profession.

Other good works we are in need of are: The Histology of the Economic Animals, Bacteriology and Pathological Anatomy and Histology, Sound and Diseased Meats and Milk, Veterinary Jurisprudence, Zootechny, The Breeding and Rearing of Animals, The Diseases and Accidents of the Pregnant and Parturient Animal, and the Diseases and Surgical Conditions incidental to Infancy, Parasitology, and lastly, Dermatology. They should be produced by *real* specialists who had a long practical experience in the subjects upon which they treat.

Roughly speaking, there are about 18,000 English speaking Veterinary Surgeons in the world, and I opine there would at least be quite one-sixth of these who would likely be purchasers of veterinary books of first-class merit.

If we love our profession and take a pride in its advancement, I believe we should raise monuments to it in the form of first-class literature from the pens of able and enthusiastic men with catholic minds and great foresight.

"PAPYRUS."

BOARD OF AGRICULTURE AND VETERINARY SURGEONS.

Sir,—The letter headed as above and over the *nom de plume* "Observer" in *The Record* for the 12th inst., implies that expense to the country would be saved if the Board employed their local veterinary inspectors only, and released those of their whole-time staff who are of military age.

The present writer absolutely fails to see wherein the element of economy enters by so-doing, and will be very glad if "Observer" will state how he thinks his idea economical. We must remember that many of the whole-time veterinary inspectors are receiving less salary than they would receive from the War Office.

For every case that a local inspector visits in connection with swine fever, the whole-time official probably visits a dozen or more.

In connection with swine fever duties, it is as well also to remind "Observer" that the whole-time official does not receive any additional payment for administering serum. In this respect alone considerable economy is practised.

Moreover, when a whole-time official finds scheduled disease present it obviates the visit of a lay official.

There are many other means by which the whole-time staff are used for the purpose of economy, and these will be apparent to those who are in sympathy with the hard-worked and exceedingly loyal whole-time staff.

F.R.C.V.S.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.		Anthrax		Foot-and-Mouth Disease.		Glanders.†		Parasitic Mange. ‡		Sheep Scab.	Swine Fever.	
		Out-breaks (a)	Ani-mals.	Out-breaks (a)	Ani-mals.	Out-breaks (b)	Ani-mals.	Out-breaks (b)	Ani-mals.	(b)	Out-breaks (a)	Slaughtered.*
GT. BRITAIN. Week ended May 12		9	9			1	1	46	87	4	78	43
Corresponding week in	1916 ...	11	13					36	66	2	138	495
	1915 ...	15	17			1	1	30	75	4	98	464
	1914 ...	19	20			1	1	34	56	1	108	1346
Total for 19 weeks, 1917		253	289			11	21	1291	2695	358	987	430
Corresponding period in	1916 ...	251	294	1	24	21	62	1256	2972	169	1784	5632
	1915 ...	300	334			12	17	253	601	148	1490	6553
	1914 ...	356	380	11	74	35	81	1173	2111	140	1380	14094

‡ The Parasitic Mange Order of 1911 was suspended from 6th August, 1914, to 27th March, 1915, inclusive.
(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked:—Lanark 1
Board of Agriculture and Fisheries, May 15, 1917. Excluding outbreaks in army horses.

IRELAND. Week ended May 12		...	...	...	...	...	...	Outbreaks 1	3	4	24	
Corresponding Week in	1916 ...	1	1	...	...	...	...	1	6	3	51	
	1915 ...	...	...	...	...	...	...	...	8	6	33	
	1914 ...	1	1	...	...	...	...	1	4	6	19	
Total for 19 weeks, 1917 ...		2	2	...	...	1	1	18	206	117	816	
Corresponding period in	1916 ...	2	6	...	...	...	...	29	207	110	856	
	1915 ...	1	1	...	...	1	3	17	226	108	639	
	1914 ...	1	1	70	887	...	...	40	322	98	443	

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, May 14, 1917
NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

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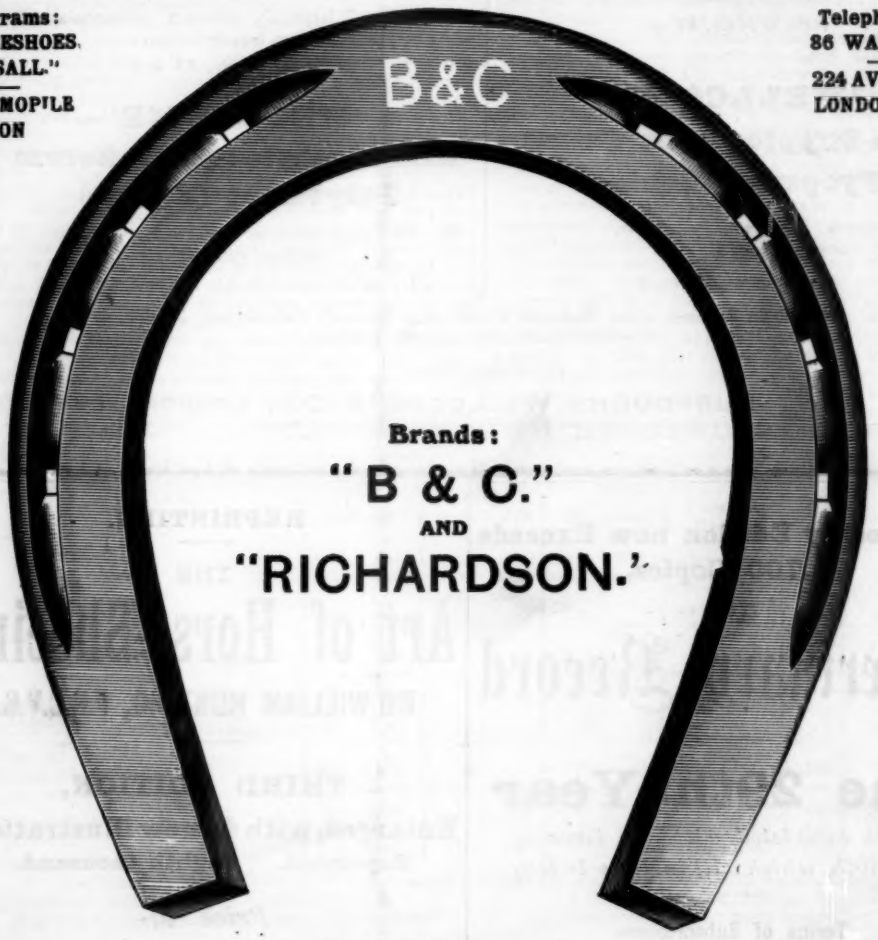

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